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SYNOPSIS

ON

A STUDY OF IMPACT OF VARIOUS DETERMINANTS ON COMMODITY SPOT AND FUTURE INDEX WITH SPECIAL REFERENCE TO METALLIC SECTOR

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INTRODUCTION

Derivatives and Commodities are risk management instruments, which drive their value from an underlying assets. The underlying assets can be Bullion, Share, Bonds, Currency, Interest and Commodities, etc. Banks, Securities Firms, Companies and Investors uses the derivatives and Commodities for making the more profit by investing minimum capital. These tools are also helpful in hedging the risk. Many of the previous studies conducted on the derivatives but in this research, researcher taken the commodity as the main aspect.

COMMODITIES

A commodity may be defined as an article, a product or material that is bought and sold. Every kind of movable property, except actionable claims, money and securities are called as Commodity. Actionable Claims means a claim to any debt which is not secured by movable or immovable property or claim to any beneficial interest in movable property not in the possession of the claimant. Commodities are easy to understand as far as fundamentals of supply and demand are concerned. Retail investors should understand the risks and advantages of trading in commodity futures. Historically, pricing in commodity futures has been less volatile compared with equity and bonds, thus providing an efficient portfolio diversification option.

Definition- Commodity refers as "any good that possesses a physical attributes." Goods defined in the Act of Forward Contract Regulation Act (1952) – "every kind of movable property other than actionable claims". Commodity comes from the French word- "Commodite" which is used to refer to an object of utility that offers some convenience or useful services.

COMMODITY MARKETS- Every commodity that is produced must eventually come to market place where it can be bought and sold. It is in this marketplace that all the elements of commerce will come together to settle a price at which the commodity will get traded. A commodity market is a market that trades in primary rather than manufactured products.

There are two types of commodity – 1. Soft commodities are wheat, coffee and sugar. 2. Hard commodities are Gold, Silver, rubber and oil.

- A future market is a central financial exchange where people can trade standardized futures contracts that is a contract to buy specific quantities of a commodity at a specified price with delivery set a specified time in the future. Futures contracts are the oldest way of investing in commodities. Futures are secured by physical assets. Commodity future contract is an agreement to buy or sell a set amount of a commodity at a pre-determined price and date. Buyers use these to avoid the risks associated with the price fluctuations of the product while sellers try to lock in a price for their product.
- Spot market or cash market is a public financial market in which commodities are traded with cash for immediate delivery. Depending on the market immediate delivery is defined as being within a month. Precious metals are properly traded on spot market.

FORWARD MARKETS COMMISSION

The Forward Markets Commission (FMC) is the chief regulator of commodity futures markets in India. As of July 2014, it regulated Rs 17 trillion worth of commodity trades in India. It is headquartered in Mumbai and this financial regulatory agency is overseen by the Ministry of Finance. The Commission allows commodity trading in 22 exchanges in India, of which 6 are national. It established in 1953 under the provisions of the Forward Contracts (Regulation) Act, 1952. Ramesh Abhishek is the chairman of this commission.

MULTI COMMODITY EXCHANGE OF INDIA LIMITED (MCX)

The Multi Commodity Exchange of India Limited (MCX), India's first listed exchange, is a state-of-the-art, commodity futures exchange that facilitates online trading, and clearing and settlement of commodity futures transactions, thereby providing a platform for risk management. The Exchange, which started operations in November 2003, operates within the regulatory framework of the Forward Contracts (Regulation) Act, 1952.

TYPES OF COMMODITY MARKET

In the table given below the following elements has been given which are related to the commodity market-

SECTORS	ELEMENTS
METAL	Aluminium, Copper, Lead, Nickel, Steel, Tin, Zinc
BULLION	Gold, Silver
FIBER	Cotton, Kapas, Jute
ENERGY	Brent Crude Oil, Crude Oil, Natural Gas, Carbon Credit
SPICES	Cardamom, Pepper, Red Chili, Turmeric, Cumin Seed, Coriander
PLANTATIONS	Cashew, Coffee, Rubber
PULSES	Chana, Masur, Yellow Peas, Tur, Urad
PETROCHEMICALS	HDPE, Polypropylene(PP), PVC
CEREALS	Maize, Barley, Rice, Sharbati Rice, Basmati Rice, Wheat
OTHERS	Guargum, Guar Seed, Gurchaku, Menthe Oil, Potato
OIL & OIL SEEDS	Castor Oil, Castor Seeds, Coconut Oil, Cotton Seed, Groundnut Oil, Mustard Oil, Mustard Seed, Refined Soy Oil, Refined Sunflower Oil, Rice Bran DOC, Rice Bran Refined Oil, Sesame Seed, Soy Bean, Soy Seeds

ITEMS IN COMMODITY METALLIC SECTOR

In the table given below the following elements has been given which are related to the commodity metallic market-

FERROUS METAL	NON –PRECIOUS METAL	PRECIOUS METAL
Steel	Aluminium, Copper	Gold
Iron ore	Nickel, Zinc	Silver
	Lead, Tin	Platinum

REVIEW OF LITERATURE

The format of a review of literature may vary from discipline to discipline and from study to study. The purpose of a review is to analyze critically a segment of a published body of knowledge through summary, classification, and comparison of prior research studies. To prepare the present study in the scientific manner, the various reviews of literature have been surveyed by the researcher in the area of commodity spot and future market. From many good review of literatures researcher has been selected the main review of literature on some specific parts. The various reviews of literature are as follows:-

INTERNATIONAL REVIEWS

S.NO.	Author	Year & Publication	Title & Source	Objectives	Research Methodology	Findings/Conclusion
1.	**Amine Lahiani & Khaled Guesmi**	Journal of Applied Business Research (JABR) 30, no. 4 (2014): 1053-1062.	Commodity Price Correlation and Time varying Hedge Ratios	This paper examines the price volatility and hedging behavior of commodity futures indices and stock market indices.	In this study GARCH model had been used. Data collection method was the Secondary data based collection.	The empirical result of this study shows that range-based DCC model out performs return-based DCC Model for most cases. This study reinvestigates the weekly hedging strategies generated by return-based and ranged-based dynamic conditional correlation (DCC) models for three stock indices, i.e. two metal commodities and one crude oil. The hedging performances of short and long hedgers are evaluated not only with traditional variance-based and utility-based measurements but also with approaches based on downside risk, such as semi-variance, low partial moment and conditional value-at-risk. Furthermore, a range-based dynamic hedging strategy sustains its predominance even if the transaction cost is considered.

2.	**Ngugi Nahashon Njoroge, Njagi Gabriel Matumond and Kimani E Maina**	Global Advanced Research Journal of Management and Business Studies (ISSN: 2315-5086) Vol. 2(5) pp. 258-267, May, 2013	Factors influencing development of financial derivatives markets: a survey of listed companies in Kenya.	To study the document and analyze the development of financial derivatives market in Kenya.	Hypothesis framed. Primary and secondary data had been collected. Correlation analysis was used to determine the relative strength of each variable. Questionnaire had been used for the primary data based analysis.	In this study, the target population was the 138 comprising of 8 departments of Capital Market Authority of Kenya (CMA), 58 Quoted Companies at NSE and 72 other financial market intermediaries. This study found out that securitization of fixed assets was very available at 29.4% of the respondents and available at 41.2% while 17.6% and 5.6% of the respondents was less available. This is the questionnaire based analysis. This shows that over 50% of securitization of fixed assets was available. The study found out that on financial innovation 42.9% of the respondents fairly embraced it, 38% and 14.3% of the respondents fully embraced and embraced it respectively while 4.8 % of the respondents did not embrace it.
3.	**Christopher R. Knittel and Robert S. Pindyck**	MIT Center for energy and environmental policy research working paper, National Bureau of Economic Research, No. w18951 April 2013	The Simple Economics of Commodity Price Speculation	To analyze the potential and actual effects of speculators, and investors in general, on commodity prices.	Correlation and Trend analysis had been used in this study. Secondary Data of oil prices for the period of 2009 to2012 had been taken for this study.	They focus on crude oil, but their approach can be applied to other commodities. In this study to determine whether speculation as the driver of price changes is consistent with the data on production, consumption, inventory changes, and changes in convenience yields given reasonable elasticity assumptions. Spot price changes for the three-month intervals, the counter factual prices are very close to the actual prices, and the correlation is 0.96. The average spot price over this period was $55.37 per barrel, and the average counter factual spot price is $55.34. Inventory changes for three month are that these two series are negatively correlated; the correlation between the two is 0.54.They show speculation had little effect on prices and volatility.

4.	**Dwyer, Alexandra, George Gardner, and Thomas Williams.**	RBA Bulletin, June (2011): 49-57.	Global commodity markets –price volatility and financialisation.	To examines the factors behind the increase in the level and volatility of commodity prices.	Statistical methods are as follows- Standard deviation, percentage and graph presentation. Secondary Data from 2001 to 2011 had been collected for analysis purpose.	In this study financial investors can affect the short-run price dynamics for some commodities, the level and volatility of commodity prices appear to be primarily determined by fundamental factors. The main fundamental factors are shift in the composition of global growth over the period. Like- China's growth. Food prices are the second reason. Demand and supply is the another factor for determining commodity. Commodity prices tend to be more volatile than many other prices in the economy because in the short term both global supply and demand for commodities are relatively price inelastic.
5.	**George M. Kornioti s-**	Division of Research & Statistics and Monetary Affairs, Federal Reserve Board, 2009.	Does Speculation Affect Spot Price Levels? The Case of Metals with and without Futures Markets	To find out the correlation between metals with and without futures contracts.	Descriptive statistics and ordinary least square of regression model are used.	This paper finds no evidence that speculative activity in futures markets for industrial metals caused higher spot prices in recent years; the annual and quarterly price growth rates of the two metal categories have been positively correlated. This comovement is driven by economic fundamentals because world GDP growth is strongly correlated with metal price growth, especially after 2002. Author use the S&P Goldman-Sachs Commodity Index returns to proxy for the volume of speculative activity and author show that these returns are unrelated to metal prices. The final test follows storage models, which suggest that speculation can affect spot markets only if it leads to physical hoarding. Focusing on metals with established futures markets, He found no evidence of physical hoarding because inventory growth is found to be negatively correlated with price growth rates.

6.	**Robert S. Pindyck**	The Journal of Futures Markets, Vol. 24, No. 11, 1029–1047 (2004)	Volatility And Commodity Price Dynamics	To examine the role of volatility in short-run commodity market dynamics and the determinants of volatility itself.	Generalized Method of Moments Structural model was used in this study. Secondary weekly data for petroleum had been collected from January 1, 1984, to January 31, 2001, for crude and heating oil, January 1, 1985, to January 31, 2001.	In this study, Generalized Method of Moments structural model of inventories, spot, and futures prices that explicitly accounts for volatility, and estimate it using daily and weekly data for the petroleum complex: crude oil, heating oil, and gasoline. The model replicates the dynamics of the heating oil spot price and convenience yield well, given the sharp movements that occurred during the two simulation periods. The model does not, however, capture the dynamics of inventories very well. This is not surprising; Model Equations explain first and second differences of inventories, so that prediction errors in the level of inventories will accumulate over time. Author increased the entire trajectory of volatility by 0.0448, which is one standard deviation of its level over the 1984–2001 sample, and then re-solved the model.
7.	**Gian Carlo Moschini and Robert J. Myers**	2002 Journal of Empirical Finance Vol.9, No.5,589-603	Testing for Constant Hedge Ratios in Commodity Markets: A Multivariate GARCH Approach	To estimate the optimal futures hedge ratio which is constant over time, given that the joint distribution of cash and futures prices.	Statistical tool -multivariate GARCH was applied for testing the hypothesis.	The multivariate GARCH model is estimated using weekly corn cash and futures prices. Statistical tests reject the null hypothesis of a constant hedge ratio and also reject the null that time variation in optimal hedge ratios can be explained solely by deterministic seasonality and time-to-maturity effects. The modified BEKK model is applied to the problem of estimating and testing optimal hedge ratios for speculative storage of corn in the Mid-west. Their statistical tests support the conclusion that optimal hedge ratios for weekly storage hedging of corn in the Midwest are indeed time varying in ways that cannot be explained simply by seasonality and time-to-maturity effects.

8.	**Kenneth R. French**	The Journal of Business, Vol.59 No.2 (apr-1986), pp.S39-S54 The university of Chicago press URL-www.jstor.org/stable/2352781	Detecting Spot Price Forecasts in Futures Prices	To identify commodity characteristics. To examine the factors that generate predictable spot price changes and the factors that obscure the markets forecasts of these price changes.	Trend analysis and seasonal variation And descriptive statistics Regression analysis had been used.	In this study, Futures price cannot provide forecast that are reliably better than the current spot price unless the variance of the expected spot price changes is a large fraction of the variance of the actual spot price changes. Positive demand shock leads to a negative expected change in the spot price. The magnitude of seasonal variation in the spot price increases with the importance of seasonality in the demand or production function. If the slope of the marginal storage cost function is relatively large, the spot price in one period is insulated from shocks in another period.

NATIONAL REVIEWS

S. No.	Author	Year & Publication	Title & Source	Objectives	Methodology	Findings/Conclusion
1.	**Rakesh H M**	International journal in Management and social science (IJMSS) Vol.02 Issue-01 ISSN:2321-1784 January 2014	Individuals Investors Behavior: A Study of Commodity Market	To identify the major factors which have greater influence on the behavior of commodity market investors. To assess the investors' perception about extent of influence of factors on behavior of investors towards commodity market.	Author uses the primary data for the study and selected Mysore as sample. He uses the principal component method of factor analysis with varimax rotation.	In this study, Through factor analysis high return, low risk, objective knowledge, and information asymmetry are the main factors which greatly influenced the behaviour of the investors. The influence of all these factors on the commodity market investors' behavior is found to be significant with 95 percent confidence level.

2.	**Agarwal, Neeti, and Gurbandini Kaur.**	Economic Survey (2010): 11. AIMA All India Management Association Journal of Management & Research, May 2013, Volume 7, Issue 2/4, ISSN 0974 – 497	Agricultural Commodity Future Trading And Its Implications–An Overview	To study the evolution and growth of commodity market in India. To study the price volatility, efficiency and arbitrage opportunity related to agricultural future commodity market	Author collected the Secondary data. Arbitrage method and trend analysis had been used. Efficient Market hypothesis analysis had been done.	This paper focuses on the conceptual perspective of commodity future trading and its implication on the commodity market. The study shows that there is much scope in the Indian market. Broadly, five sources of the volatility on agricultural future markets have been identified in this study. They are year effect, the calendar month effect, the contract month effect, the maturity effect and trading session effect. The verifiable hypothesis of this is that the volatility of price changes grows larger as contracts approach maturity. Their results suggest that greater mispricing occurs with increased market volatility, and hence generating profitable arbitrage opportunities.
3.	**Prof. Gurbandini Kaur**	All India Management Association(AIMA) Journal of Management & Research, 2013	A Study of Prospects Of Agricultural Commodity Futures In India – A Case of Turmeric	To study of relationship between the spot and future price for turmeric. To study the scope of arbitrage in the agricultural market in India.	This is the Secondary data based exploratory research. Statistical techniques are used as- Correlation technique, Regression, & Standard deviation.	In this study, there is strong correlation between spot close price and future open price for turmeric commodity. Thus spot closing price on the previous day (N-1) influences the opening price of future contract on the next day (day N). Furthermore, the research showed not much arbitrage opportunity to exist in the turmeric product due to very minute difference between standard deviation in the opening and closing price of future contract. The low arbitrage opportunity is nullified by the transaction cost. In this case R^2= .974, explains 97.4% of total variation observed in the dependent variable. Thus only 2.6% of total variation in the dependent variable (future open) remains unexplained by the regression equation.

4.	**Vijaya Kumar, N., S. Parvadavardini, and M. Dharani.**	Prajnan-Journal of Social and Management Sciences 41, no. 3 2013.	Relationship between Futures and Spot Market for Selected Spices in India.	They examine the relationship between spot and futures prices for selected five agricultural commodities, namely, Chili, Coriander, Jeera, Pepper and Turmeric.	They considered all the contracts of the above commodities Over a period of 36 months, from Jan 2008 to Dec 2010. The study examined the existence of unit root in the data series by employing Augmented Dickey-Fuller (ADF) test and Johansen Co integration test and the presence of disequilibrium between markets in short run by employing Vector Error Correction Model (VECM).	The ADF test indicates that the futures prices and spot prices of chili, coriander, jeera, pepper and turmeric series are non-stationary at all levels. Null hypothesis of the series in unit root is summarily rejected at 5 per cent level of significance. Johansen co integration test rejects the null hypothesis that the spot and futures prices of selected spices are not co integrated and clearly depicts the two integrated variables having a long-run relationship at 5 per cent level of significance, which is confirmed by the lower critical values than the estimated Max rank values and Trace rank values. Thus, the futures and spot price series are serially correlated and hold the long-run relationship. This model takes the null hypothesis in which the errors are co integrated in short-run. VECM shows that the R^2Chilli is 0.41, coriander is 0.39, jeera is 0.48 peppers is 0.44 turmeric is 0.52 future price. VECM shows that the R^2 Chili is 0.ooo7, coriander is o.003, jeera is 0.003, pepper is 0.001, and turmeric is 0.004 spot price.
5.	**Santhosh Kumar**	World Economics Association Conferences (WEA) No. 3 Rethinking Financial Markets, 1-24 http://rfconference2012.worldeconomicsassociation.org/wp-	Commodity Price volatility and time varying hedge ratios: Evidence from the notional Commodity Futures Indices of India.	To measure the price volatility of different commodities in the spot market. To analyze the hedge ratio using different econometric models. To estimate the effectiveness of hedge ratio estimated in minimizing exposure to the	In this study, four notional commodity spot and future indices Agriculture (AGRI), Energy (ENER), Metal (META) and an aggregate of agricultural, energy and metal commodities (COMDX), retrieved from	In this study, the descriptive statistics on spot and futures return of Agriculture (LRAS&LRAF), Energy (LRES&LREF), Metal (LRMS&LRMF), and Comdex (LRCS&LRCF), indices. Negative skewness, except for agri spot return, high kurtosis and a significant Jarque-Bera statistics are clear evidence for asymmetry in distribution, thick tail and non-normality respectively. Among the three bivariate GARCH models DCC-GARCH reports a higher variance reduction in AGRI (60.255%) and META (54.338%) markets.

		content/uploads/WEA-RFMConference2012-Kumar.pdf		spot market.	the commodity future exchange MCX India. Variance analysis, ARCH, GARCH (P, Q) model was used.	CCC-GARCH provides higher variance reduction in ENER (70.407%) and COMDX (46.343%) markets. The DVECH-GARCH model stands second best in variance reduction in both ENER and COMDX markets. In COMDX index, which is an aggregate of agricultural, energy and metal commodities, DVECH-GARCH presents a maximum variance reduction (77.1%). It is DBEKK-GARCH and CCC-GARCH which stand second in variance reduction in AGRI and META markets respectively.
6.	**N. Sajipriya**	International Journal of advancements in Research & technology, Vo-1,issue-5,ISSN-2278-7763--October-2012	A Study on Market Efficiency of Selected Commodity Derivatives Traded on NCDEX During 2011-	To analyze market efficiency of selected commodities (Chana, pepper, steel, silver, crude oil) To study the market efficiency of NCDEX in India by considering all commodity indices in future and spot markets.	The five commodities Pepper, Crude palm Oil, steel silver and Chana are chosen for studies which are traded on NCDEX. This study is based on Secondary data. Data collected from NCDEX WEBSITES-www.ncdex.com from 1 jan to 31 dec 2011 and Run test is used.	The study considered daily spot and futures prices of five selected commodities traded on NCDEX over 12 month period (the futures contracts originating and expiring during the period January 2011 to December 2011). The results of Run test indicate that both spot and futures prices are weak form efficient. The significant negative Z value for prices indicate that the actual number of runs fall short of the expected number of runs. Theoretical basis of the weak-form efficient hypothesis states that the successive prices are independent and past prices have no predictive content to forecast commodity price. The non parametric run test for the full sample period indicated that both future and spot price for all selected commodities are efficient in weak form.
7.	**Nenavath Sreenu**	ZENITH International Journal of Business Economics & Management Research	A Study on Technical Analysis of Derivative Stock	To present a theoretical framework relating to derivative market in India. To observe the daily price	Data collection method was the Primary and secondary data. Statistical	In this study, the figures revealed by Futures Industry Association (FIA) Annual Volume Survey and reported here under bring out the fact that more than 15 billion futures and options contracts were traded during 2009 on the 54 important exchanges that

		Vol.2 Issue 3, March 2012, ISSN 2249 8826, 81-100 Online available at http://zenithresearch.org.in/	Futures And The Role For Debt Market Derivatives in Debt Market Development In India.	movement of selected stock futures. To identify the buying and selling signals to the selected scripts.	method was Moving Average Method.	report to the FIA, reflecting a remarkable increase of 28% from the previous year. At last four years, these figures reflect that the growth rate was 29 % in 2008, 19% in 2008, 12% in 2007, and 9% in 2006. The total volume traded globally over the period 2000-07, the US exchanges alone constituted as much as 35 percent share. North America with a share of about 40 percent, Asia-Pacific occupies the second slot with a share of 28 percent and Europe falls at the third place with its contribution of 24 percent. The turnover of the NSE derivatives segment in 2006-08 stood at Rs. 2130610 crores. It grew to Rs.13090477 crores during the year 2007-09, displaying a more than six-time increase over the five year period. In marked contrast, at the global level the increase was less than even two-fold: the turnover was $ 8163 million in 2003 and $ 15187 million in 2007.
8.	**Dr. Sathyaswaroop Debasish**	VIEW POINT Volume 2 • No. 1 • January-June 2011	A Study on Relative Volatility in Spot and Futures Market in Selected Stock Indices of NSE	The main objective of the study is to investigate whether there has been significant change in relative volatility of the underlying spot return and futures return.	The period of study is from 1 January 2000 to 31 December 2010. The study used three stock indices of NSE namely Nifty, CNX IT and CNX Bank. Hypothesis has been framed and it was tested in 1%, 5% and 10% level. Volatility Measurement Tools Are	The study finds that for the three NSE indices, the study rejects the null hypothesis of 'no significant change in relative inter-day volatility between spot prices and futures prices' over the entire period 2000-2010, but cannot reject the hypothesis fully for all the individual years. There is significant change in relative intra-day volatility between spot prices and futures prices for all the three NSE indices. For NSE Nifty, the volatility is higher for futures market for all the individual years under study. Further, the inter-day volatility of NSE Nifty futures is 0.0152 in comparison 0.0143 for spot market over the entire period of 2000-2010. Only for year 2004, the relative inter-day volatility of

					Parkinson's Extreme Value Estimator & Garman-Klass volatility (GKV) measure.	Nifty is statistically significant with futures volatility higher at 0.0196 and spot volatility at 0.0176. For CNX-IT and CNX-Bank, the futures volatility is relatively higher than spot inter-day volatility for all the years.
9.	**Mukthar, Jaheer**.	International Journal of Business Management and Information Technology 3, no. 2 (2011).	A Study on Empirical Analysis of Price Discovery and Causality between NSE Spot and Future Market in India.	To empirically examine the price discovery and causal relationship between spot and future market. To empirically verify whether future market or spot market respond faster to the deviation from equilibrium price.	The study is based on secondary data. Study has used daily closing values of S & P CNX nifty futures and spot S & P CNX nifty index, which are considered from June 12 2000 to 10 November 2008. The data consist of 2200 observation for both future prices and spot prices. To check the stationarity, long run co integration and causal relationship unit root test like Dickey Fuller (DF) Test and Augmented Dickey Fuller (ADF), co integration test and Vector Error Correction Model (VECM) was	The results reveal that the null hypothesis that the spot and future price have unit root cannot be rejected in level 1% level of significance. This indicates that both these series have unit root and they are non stationary at level. However when they take their first difference the results reveal that both series are stationary. The null hypothesis the series has unit root can be rejected at 1 % level of significance for both series. This provides evidence for the argument that both future and spot prices are non stationary at level and stationary at first difference. Therefore they are integrated of order. The next step is to verify the direction of causality and to identify the short run dynamics. For this the Vector Error Correction Model (VECM) is employed. Using Akaike's Information Criteria (AIC) and Schwarz Criteria (SC) two lags are selected for VECM model. The coefficient of Error Correction term indicates the speed of adjustment of future and spot prices form a short run deviation from the long run equilibrium value. Only the Error Correction term of future prices is found statistically significant and the Error Correction term of spot prices is statistically insignificant. Future price has greater speed of adjustment to the previous period's deviation from long-run equilibrium than the spot price

					used.	series. There is two way (bidirectional) causality between spot and future market. Price discovery occurs in both markets.
10.	**Kumar, Brajesh, Priyanka Singh, and Aiav Pandey.**	Indian Institute of Management W.P. No.2008-06-01, 1-35 Available at SSRN 1206555 (2008). June 2008	Hedging effectiveness of constant and time varying hedge ratio in Indian stock and commodity futures markets.	This paper examines hedging effectiveness of futures contract on a financial asset and commodities in Indian markets.	They estimate dynamic and constant hedge ratio for S&P CNX Nifty index futures, Gold futures and Soybean futures. Various models OLS, VAR, and VECM are used to estimate constant hedge ratio. To know the stationarity they used unit root test, co integration test, To estimate dynamic hedge ratios, they use VAR-MGARCH.	They compare in-sample and out-of-sample performance of these models in reducing portfolio risk. It is found that in most of the cases, VAR-MGARCH model estimates of time varying hedge ratio provide highest variance reduction as compared to hedges based on constant hedge ratio. Transaction cost in implementing dynamic hedging using VAR-MGARCH may nullify some of the gains provided by it. Both stock market and commodity derivatives markets in India provide a reasonably high level of hedging effectiveness (90%) and it can be said that derivatives markets in Indian context provide useful risk management tool for hedging and for portfolio diversification. In the sample the OLS shows the value of 0.9696 and out of the sample OLS value is 0.93246 is the value of future 1.

NEED OF THE STUDY

This study on Commodity market is very much appreciable on the grounds that it gives deep insights about the commodity spot and future market. It would be essential for the perfect way of trading in commodity futures. Studies of this type are more useful to academicians and scholars to make further insights into the various aspects of commodity futures in similar organizations. An investor can choose the right underlying for investment, which is risk free. The study included the changes in daily price movement and buying and selling signals to the selected commodity index. This helps the investor to take right decisions regarding trading in Commodity spot and future market.

1. There are numerous studies conducted on the Derivative market but very few studies are based on commodity market.

2. Effect of Behavioural aspects of commodity market considered in the previous researches but yet there is no study regarding determinants of commodity market.

3. The previous studies on commodity market focused mainly on agriculture sector. But none of the study has been conducted on the metallic sector so far. Metallic sector prices are not only important to manufacturers and end-users, but have long been used as a tool for monitoring economic and market conditions. The prices of individual metals are essentially determined by supply and demand. How these supply and demand determinants affect the metallic sector and what are the others determinants which affect the prices of metallic sector. So, therefore, there is a need of study on the metallic sector in the commodity market. So, research can be conducted for the metallic sector.

OBJECTIVES OF THE STUDY

The objectives of the study provide the proper framework and layout of any research activities. To make the present study more scientific following objectives are designed by the researcher and the objectives are as follows-

1. To analyse the pattern of commodity spot and future market in India of Metallic Sector.
2. To identify the major determinants which affect the commodity market.
3. To examine the impact of selected determinants on commodity spot and future indices of Metallic Sector.
4. To predict the behavior of commodity spot and future market.

RESEARCH DESIGN AND RESEARCH METHODOLOGY

Research design and research methodology are the important part of any research work.

SCOPE OF THE STUDY-

Commodity spot and future market index will be considered for the purpose of study.

SAMPLE SELECTION CRITERIA-

On the basis of previous reviews the **Metallic sector as the sample** in the Commodity Market has been selected. Because, none of the study was conducted on the metallic sector.

SAMPLE SIZE-

Future and Spot index in metallic commodity sector MCX Metal will be taken into consideration as the Sample size of the study. MCX Metal consists of 7 items such as – Gold, Silver, Copper, Zinc, Aluminium, Nickel and Lead.

TYPE OF RESEARCH-

This study will be the Analytical type of the research.

DURATION OF THE STUDY-

For the purpose of analysis of the data a period of **3 financial years** from 2014-2015 to 2016-2017 will be taken into consideration.

TYPE OF DATA-

In order to identify the determinants and analyse the determinants this study will be based on the **Secondary data.**

DATA SOURCE-

The secondary data will be collected from the **Web portals**.

- Data related to the spot and future index will be collected from the Multi Commodity Exchange websites i.e. http://www.ncdex.com & National Commodity Derivative Exchange websites- http://www.mcxindia.com.
- Data for determinants (regarding some of identified determinants) will be collected from stock exchange index i.e.-**www.moneycontrol.com and www.bseindia.com**.
- Data of investment (FII), oil prices, Exchange rates and gold prices rate will be collected from **ministry of finance, dipp.nic.in, sebi.gov.in and fipbindia.com**, **www.mcxindia.com, www.moneycontrol.com, goldprice.org, http://www.goldpricesindia.com/, www.oil-price.net, www.imf.orgdata.worlbank.org** and other information collected from other sources of **secondary data will be journals, books, newspapers, magazines and news etc.**

HYPOTHESIS-

- **H_{01}** – There is no significant change in the pattern of Commodity Spot and Future market of Metallic Sector in India.
- **H_{02} –** There is no significant impact of selected determinants on Commodity Spot and Future Indices of Metallic Sector.

STATISTICAL TOOL –

There are various techniques which will be taken into consideration in this study.

- Descriptive statistics will be used to know the average pattern & Trend will be used to know the pattern movement of the series.
- Correlation will be used to know the relationship between the data series & Regression (OLS-Ordinary Least Square) will be used to know the degree of the pattern and impact of the variables.
- Factor Analysis will be used to identify the various determinants which has the effect on the commodity metallic sector.
- ADF-Augmented Dickey Fuller Test will be used to know the stationarity and long term existence in the data series.
- GARCH- Generalized Autoregressive Conditional Heteroskedasticity & ARCH-Autoregressive Conditional Heteroskedasticity to check the data whether it will be highly volatile and low volatile in nature.
- Other.

OBJECTIVE WISE RESEARCH METHODOLOGY

The researcher will use the following specific research methodology-

OBJECTIVES	**TOOLS AND TECHNIQUES.**
1. To analyze the pattern of commodity spot and future market in India of Metallic Sector.	To achieve this objectives researcher will collect the metallic sector spot and future secondary data from the websites http://www.ncdex.com, & http://www.mcxindia.com on three financial year's basis. Trend and correlation will be used for the analysis purpose.
2. To identify the major determinants which affect the commodity market.	To achieve this objective the researcher will identify major determinants from the previous studies and from the current scenario (news). Factor Analysis will be used for this objective.
3. To examine the impact of selected determinants on commodity spot and future indices of Metallic Sector.	To achieve this objective researcher will analyse the determinants of metallic sectors. ADF, OLS will be used for this purpose of study.
4. To predict the behavior of commodity spot and future market.	This objective will be achieved by predicting the behavior through creating ARCH, GARCH, and other Appropriate model.

PROPOSED CHAPTER PLAN

CHAPTER NO.	**NAME OF THE CHAPTERS**
CHAPTER-1	INTRODUCTION
CHAPTER-2	REVIEW OF LITERATURE
CHAPTER-3	ANALYSIS OF THE FUTURE AND SPOT COMMODITY MARKET OF THE METALLIC SECTOR.
CHAPTER-4	IDENTIFICATION OF THE VARIOUS DETERMINANTS.
CHAPTER-5	ANALYSIS AND INTERPRETATION OF THE DETERMINANTS OF THE METALLIC SECTOR.
CHAPTER-6	PREDICTION OF THE DATA
CHAPTER-7	FINDINGS AND SUGGESTIONS
	CONCLUSION
	REFERENCES & BIBLIOGRAPHY ANNEXURES

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